

ABSTRACT

5 This invention provides a method of making nano-scaled toroidal magnetic memory cells, such as may be used, for example, in magnetic random access memory (MRAM). In a particular embodiment a semiconductor wafer substrate is prepared and a conductor layer is provided upon the wafer. A hard layer is deposited upon the first conductor. From the hard layer, ion etching is employed to form an annular wall about a pillar, the wall and pillar defining an annular slot. A ferromagnetic data layer is deposited within the annular slot and a junction stack is then provided upon at least a portion of the data layer. A dielectric is applied to insulate the structure and then planarized to expose the pillar.